

Review Key Financial Equations

Simple Interest
 $I = Prt$

Compound Interest
 $A = P(1+i)^n$

Regular Payments
 $A = \frac{R[(1+i)^n - 1]}{i}$

Quarterly = 4
 Monthly = 12
 Semi-annually = 2
 daily = 365
 annually = 1
 weekly = 52
 biweekly = 26

Jan 13-9:15 AM

Present Value of a Regular Annuity 8.6 p 501-508

Present Value: the amount of \$ that must be invested today at a given interest rate in order to make regular payments

$$PV = R \frac{[1 - (1+i)^{-n}]}{i}$$

Jun 2-1:37 PM

Ex 2 p 503

$$PV = R \frac{[1 - (1+i)^{-n}]}{i}$$

$PV = \frac{50[1 - (1+0.00458)^{-60}]}{0.006458}$ $R = 50$ $i = 7.75\%$ $i = 0.0775$

$PR = \frac{50[1 - (1+0.006458)^{-60}]}{0.006458}$ $i = 0.006458$

$PR = \frac{50[1 - 0.67961135]}{0.006458}$ $n = 5 \times 12 = 60$

$PR = \frac{50[0.32038865]}{0.006458}$

$PR = \frac{16.04}{0.006458}$

$PR = 2483.74$

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Ex 3 p 504

$$PV = R \frac{[1 - (1+i)^{-n}]}{i}$$

$1500 = R \frac{[1 - (1+0.0091666)^{-12}]}{0.0091666}$ $n = 1 \times 12 = 12$ $i = 0.11/12$

$1500 = R \frac{[1 - (1.0091666)^{-12}]}{0.0091666}$

$1500 = R \frac{[1 - 0.896283827]}{0.0091666}$

$1500 = R(0.103716844)$

$1500(0.0091666) = R(0.103716844)$

$13.7499 = R$

$132.57 = R$

Total Price = $12 \times 132.57 = 1590.84$

Jun 2-2:01 PM

Ex 11 p 507

$$PV = R \frac{[1 - (1+i)^{-n}]}{i}$$

$PV \cdot i = R[1 - (1+i)^{-n}]$

$\frac{PV \cdot i}{[1 - (1+i)^{-n}]} = R$

$\frac{22000(0.002)}{[1 - (1+0.002)^{-60}]} = R$ $PV = 22,000$ $n = 5 \times 12 = 60$ $i = 0.024/12 = 0.002$

$\frac{44}{[1 - (1.002)^{-60}]} = R$

$\frac{44}{[1 - 0.8870]} = R$

$\frac{44}{0.1129} = R$

$389.47 = R$

May 17-8:18 AM

p 506-508

2, 4, 5, 6, 9, 12

Jun 2-2:09 PM

#8 p 507 $PV = R \frac{[1 - (1+i)^{-n}]}{i}$

$$PV = \frac{35[1 - (1+0.013)^{-18}]}{0.013}$$

$R = 35$
 $i = \frac{0.16}{12} = 0.013$
 $n = 18$

$$= \frac{35(1 - (1.013)^{-18})}{0.013}$$

$$= \frac{35(1 - 0.787876)}{0.013}$$

$$= \frac{35(0.2121)}{0.013}$$

$= \$556.82 + 150 \text{ dep}$
 $= \$706.82$

Jun 2-2:17 PM

$$A = P(1+i)^n$$

$i = 0.06 / 4 = 0.015$

$$A = 3600(1 + 0.015)^{12}$$

$$A = 3600(1.015)^{12} = 3741$$

$$A = 3600(1.015)^{12} = 12$$

May 31-9:48 AM